Acc. Nr.: AR0046931 Ref. Code: UR0000

UDC 621.791.72.052:620.18

USSR

ZAVTSEVA, A. V.

"Substructure of Weld Joint Metal in Tensile Tests Under Elevated Temperature Conditions"

Moscow, Dokl. Nauchno-Tekhn. Konferentsii po Itogam Nauchno-Issled. Rabot za 1968-1969 gg. Mosk. Energ. In-t, 1970. Sekts. Energeticheskogo Mashinostr. Tekhnol Met. (Reports of the Scientific Technical Conference on the Results of Scientific Research for 1968-1969, Moscow Power Institute, 1970. Power Machinery Construction Section. Metal Technology Subsection), 1969, pp 76-80 (from Moscow, Referativnyy Zhurnal -- Svarka, No 11, 1969, Abstract No 11.63.51 by V. Fomenko)

18

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Reel/Frame
19790300

A00046931

Translation: Investigations were conducted of the dislocation structure of iron silicide weld joints prior to and after tensile tests at a 500° temperature, inasmuch as at this temperature (0.47 of iron silicide melting temperature) the substructure in the process of deformation forms comparatively slowly. Test specimens were prepared of 300x60x2.5 mm plates fused in the center along the large side with an electron beam and argon arc welding with a tungsten electrode. Study of the dislocation structure of weld joints after welding showed three characteristic zones possessing different dislocation structures in the weld joint metal under all welding conditions: seam metal -- dislocations in sections with chemical nonuniformity, dislocations in slip bands and sub-boundaries; weld-affected zone directly adjacent to the seam -- dislocations in slip bands and sub-boundaries; the weld-affected zone located at some distance from the seam -- dislocations in slip bands. The maximum density of dislocations develops in the weld-affected zone located at some distance from the seam (second zone mentioned above), and the minimum in the zone directly adjacent to the seam. It was shown that in the weld joint metal, dislocations in sections with chemical nonuniformity and in sub-boundaries formed in welding are stable in the process of testing at a temperature of 500°. The presence in the weld joint metal of an uneven substructure which is stable in the testing process leads to the conclusion that plastic flow in the seam and weld-affected zone will proceed less uniformly than in the base metal.

2/2 19790301

USSR

UDC 576.851.214.078.13

ZAYTSEVA, G. A., Bacteriology Laboratory, Kirov Scientific Research Institute of Blood Transfusion Kirov

"The Fluorescent Antibody Method for Detecting β-Hemolytic Streptococcus Group A"

Moscow, Laboratornoye Delo, No 12, 1971, pp 736-738

Abstract: For a fast diagnosis and identification of group A streptococcus a method is recommended which is based on fluorescent antibodies with the use of fluorescence (microscope ML-2). Description is given of the cultivation of Streptococcus bacteria, separation of different strains, preparation of serum, and conjugation of the serum with fluorescent isothiocyanate. Among 122 specimens tested for group A streptococcus by the method, 96 were positive, as opposed to 89 positive identifications by the ring-precipitation method. It takes 24 hr to obtain the results. The whole test precedure is described in detail.

1/1

Heat Treatment

USSR UDC 669.15'24-194:669.018.58

AL'TGAUZEN, O. N., LYUBETSKAYA, O. V., BIRMAN, S. R., and ZAYTSEVA, G. A., Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin /TsNIICHERMET/

"Magnetic Properties of Iron-Nickel Alloys"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 4, 1972, pp 68-70

Abstract: A study has been made of the effect of final heat treating on both the structure and magnetic properties of 0.02-, 0.1-, and 0.2-mm thick strip of 79NM, 50N, and 50NP magnetically soft alloys operated in constant or variable fields at 50 to 9600 cps. The properties of these alloys in a constant magnetizing field are shown to be very sensitive to annealing temperatures within 900-1100°C and to cooling rates below 600°C from 0.4 to 17 deg/min. As the frequency is increased to 9600 cps, the sensitivity of the alloys to heat treating decreases. A decrease in annealing temperature may reduce the frequency dependence of the maximum permeability of the strip. In a variable magnetizing field, an increase in frequency makes the maximum permeability and specific losses of the strip less sensitive to changes in cooling rates from 2 to 17 deg/min.

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1/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--KINETIC CHARACTERISTICS OF THE FORMATION OF A TANTALUM PEROXIDE COMPLEX IN SULFURIC ACID SOLUTIONS -U-

AUTHOR-(02)-VASILYEV, V.P., ZAYTSEVA, G.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1016-21

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TANTALUM COMPOUND, SULFURIC ACID, ENTROPY, CHEMICAL KINETICS, PEROXIDE, CHEMICAL REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1100 STEP NO--UR/0078/70/015/004/1016/1021

CIRC ACCESSION NO--AP0123092

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123092

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF THE REACTION OF H SUB2 O SUB2 WITH TAO SUB2 PRIME POSITIVE IN H SUB2 SO SUB4 WAS STUDIED SPECTRO PHOTOMETRICALLY USING ABSORPTION AT 280 M MU. THE RATE CONST. (K) DECREASED MARKEDLY WITH DECREASING CONCN. OF H SUB2 SO SUB4. THE REACTION IS 1ST ORDER WITH RESPECT TO H SUB2 O SUB2 AND TA. IN 80PERCENT H SUB2 SO SUB4, THE ACTIVATION ENERGY AND ENTROPY ARE 13.7 KCAL-MOLE AND MINUS EU, RESP. RESULTS FOR 50, 70, 80, AND 90PERCENT H SUB2 SO SUB4 CONCN. AT 25, 40, 50, AND 60DEGREES ARE GIVEN.

FACILITY: IVANOV, KHIM.-TEKHNOL. INST., IVANOVO, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--PREPARATION AND EXAMINATION OF HIGH PURITY SILICA GEL FOR GAS CHROMATOGRAPHY -U-

AUTHOR-(05)-AKSHINSKAYA, N.V., ZAYTSEVA, G.YE., KISELEV, A.V., NIKITIN, YU.S., STRIZHKOV, B.V.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 160-166

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SILICA GEL, CHEMICAL PURITY, GAS CHROMATOGRAPHY, ORGANIC SILANE, THERMAL EFFECT, GEOMETRIC FORM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0392 STEP NO--UR/0069/70/032/002/0160/0166

CIRC ACCESSION NO--APO113310

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0113310

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GEOMETRIC MODIFICATION OF HIGH PURITY SILICA GEL PREPARED BY HYDROLYSIS OF TETRAETHOXYSILANE HAS BEEN CARRIED OUT UNDER VARYING HYDROTHERMAL TREATMENT CONDITIONS. IT HAS BEEN SHOWN POSSIBLE TO PREPARE SAMPLES WITH SURFACE AREA FROM 415 TO 2 M PRIME2-G AND MEAN PORE SIZE FROM 90 TO 12500 ANGSTROM. THE RETENTION TIMES OF SPECIFICALLY ADSORBED AROMATIC HYDROCARBONS AND POLAR ORGANIC COMPOUNDS ON HIGH PURITY MACROPOROUS SILICA GEL ARE LESS AND THE CHROMATOGRAPHIC PEAKS OF THESE SUBSTANCES MORE SYMMETRICAL THAN FOR COMMERCIAL MACROPOROUS SILICA GEL OF SIMILAR GEOMETRIC STRUCTURE CONTAINING SESQUIOXIDES AS IMPURITIES.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203730005-9"

USSR

UDC 616.981.25-06:616.12-008.314-07:616.839.21

MIKHAYLOV, V. V., and ZAYTSEVA, I. A., Department of Pathological Physiology imeni A. A. Bogomolets, Saratov Medical Institute

"Role of Autonomic Innervation of the Heart in the Origin of Bradycardia in Acute Staphylococcus Intoxication"

Moscow, Kardiologiya, No 2, 1971, pp 134-135

Abstract: The central and peripheral ends of transected vagus nerves were stimulated in cats at various times after they were poisoned with Staphylococcus toxin (0.2 ml/kg). From the beginning of the poisoning the excitability of the peripheral and central portions of the parasympathetic innervation of the heart increased markedly simultaneously with the appearance of the initial clinical symptoms (general weakness, bradycardia, salivation, vomiting, etc). At the same time the amount of epinephrine decreased in the vagus nerve, hypothalamus, solar plexus, spinal cord, etc. while the amount of norepinephrine increased substanitally. The amount of epinephrine and norepinephrine in the myocardium either remained unchanged or increased at this stage. Later on, however, the epinephrine content markedly decreased as the norepinephrine level rose. Thus, the main factor in the mechanism of development of bradycardia in staphylococcus intoxication is the intensified excitavility of the parasympathetic nerves of the heart combined withsevere disturbance of catecholamine metabolism. 1/1

USSR

UDC 615.22:547.834.4

MIKHLINA, YE. YE., ZAYTSEVA, K. A., VOROB'YEVA, V. YA., MASHKOVSKIY, M. D., and YAKHONTOV, L. N., All Union Scientific Chemical-Pharmaceutical Research Institute Imeni S. Ordzhonikidze, Moscow

"Synthesis and Pharmacological Study of the Derivatives of 3-Hydroxy- and 3-Aminoquinuclidines"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 7, No 8, Aug 73, pp 20-24

Abstract: A series of substituted quinuclidines was synthesized. To obtain 3-(2'hydroxybenzoyloxy)quinuclidine and related ethers, the 3-hydroxyquinuclidine was reacted with benzoic acid chlorides in pyridine at 20° or 100°. 3-Acylaminoquinuclidines were synthesized by reacting 3-aminoquinuclidine with respective acid chlorides. Two methods were used to prepare 3-alkyl- and 3-aryl-aminoquinuclidines: reduction of the 3-acylaminoquinuclidine with $LiAlH_4$, and reductive alkylation of 3-aminoquinuclidines with various carbonyl compounds, or of the respective amines with 3-ketoquinuclidine. The pharmacological studies were carried out using 3-benzoyloxyquinuclidine hydrochloride as the standard.
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USSR

MIKHLINA, YE. YE., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 7, No 8, Aug 73, pp 20-24

Only the ethers containing OH, CH_3 or Cl in the phenyl ring approached the activity of the standard compound. The rest of the derivatives had a diminished pharmacological effect or lacked it altogether.

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ZAYTSEVA, K. A.

JPRS 55729

17 April 1972

REPETITION RATE OF RANGING SIGNALS OF DOLPHINS AS A FUNCTION OF DISTANCE TO TARGET

[Article by Yu. P. Morozov, A. I. Akopian, V. I. Kurdin, K. A. Zaytseva and Yu. A. Sokovykh, Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, USSR Academy of Sciences, Leningrad; Moscow, Biofizika, Russian, Vol 17, No 1, 1972, submitted 24 September 1970, pp 139-144]

Abstract: This paper gives the results of an experimental study of the patterns of change in the repetition rate of ranging signals of a dolphin in the process of active ranging to a target (fish). It was established that the repetition rate of ranging signals during movement of the animal toward the fish varies within a certain range, at the same time retaining high values $T_0 = 2L/c$, where L is the distance from the dolphin to the target, c is the speed of propagation of sound in the water. The collected data make it possible to assume that the dolphin emits each successive ranging pulse only some time (averaging 20 msec) after the echo from the preceding pulse is received.

The ever-increasing interest in the study of dolphins is attributable to a high degree to their possession of a highly developed echo-ranging apparatus. This enables them to detect and discriminate extremely reliably and with inoperative vision to different types of food and other objects and to differentiate precisely not only the size and shape of objects, but their structure (materials as well [illegible]). It is natural that the biophysical principles of the operation of the echo-ranging apparatus of the dolphin are of great interest in both evolutionary-physiological and bionic respects.

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ANTIARRHYTHMIC ACTIVITY OF OXYLIDINE -U-

AUTHOR-(02)-ZAYTSEVA, K.A., MASHKOVSKIY, M.D.

COUNTRY OF INFO--USSR

SOURCE--FARMAKOL. TOKSIKOL. (MOSCOW) 1970, 33(3), 305-9

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RABBIT, CAT, CALCIUM CHLORIDE, RAT, DRUG EFFECT, ALKALOID, ARRHYTHMIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605003/E04 STEP NO--UR/0390/70/033/003/0305/0309

CIRC ACCESSION NO--AP0139555

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139555

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OXYLIDINE AT 3 TIMES LO PRIME NEGATIVE6 M INCREASED THE REFRACTORY PERIOD OF ISOLATED RABBIT AURICLES BY 25PERCENT, AND WHEN GIVEN I.V. TO CATS AT 1-10 MG-KG IT DECREASED OR SUPPRESSED ARRHYTHMIA CAUSED BY ELEC. SHOCK OR ADMINISTRATION OF CACL SUB2. AT 10-15 MG-KG I.M. OR 50 MG-KG I.P. IT HAD A SIMILAR EFFECT ON RAT HEART ARRHYTHMIA CAUSED BY ADMINISTRATION OF ACONITINE. DOSES OF 200-250 MG-KG GIVEN ORALLY TO THE RATS PREVENTED ARRHYTHMIA UPON SUBSEQUENT ADMINISTRATION OF ACONITINE. FACILITY: LAB. FARMAKOL., VSES. NAUCH.-ISSLED. KHIM.-FARN. INST. IM. ORDZHONIKIDZE, MOSCOW, USSR.

UNCLASSIFIED

UDC 616.43-001.28-092.9-091

USSR

ZAYTSEVA, K. K., BUTOMO, N. V., and FOMINA, G. S., Military Medical Academy imeni S. M. Kirov, Leningrad

"Morphofunctional Changes of Endocrine Organs in Experimental Radiation Chimeras"

Moscow, Doklady Akademii Nauk SSSR, Vol 193, No 3, pp 703-705

Abstract: The morphofunctional state of the adrenal and thyroid glands and the anterior part of the pituitary gland in long-lived allogenic radiation chimeras was studied under conditions of bone marrow transplants. The recipients (male mice and rabbits) were subjected to gamma-ray irradiation from a Co^{60} source. The test animals received bone marrow cells or a transplant 24 hours after irradiation. Control and test animals were sacrificed and examined 40-50 days later. Hyperfunction of the adrenal cortex, hypofunction of the thyroid gland, and some activation of the thyrotropic function of the anterior portion of the pituitary gland were found to occur when the animals exhibited a secondary illness. In animals with no symptoms of a homologous disease and in syngenetic chimera, these conditions are either absent or only very weakly evident. Consequently, these conditions cannot be attributed exclusively to the development of immunological reactions. The disturbances must be regarded as partially a result of radiation

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USSR

ZAYTSEVA, K. K. et al, Doklady Akademii Nauk SSSR, Vol 193, No 3, pp 703-705

sickness. Intensification of the thyrotropic activity of the anterior part of the pituitary gland is a compensating reaction to thyroid insufficiency, which, however, does not lead to elimination of hypothyreosis because of the disease of the thyroid. It may also be the result of a disturbance in the mechanisms of thyrotropic hormone removal.

2/2

UDC: 597.0/5-15

USSR

SHENTYAKOVA, L.F., SHENTYAKOV, V.A., STEPANOV, V.S., SMIRNOVA, N.F., KUZMINA, V.V., BARONKIN, O.F., BAYEVA, G.D., ZAYTSEVA, K.N., Institute of Biology of Inland Waters Academy of Sciences, USSR

"The Effect of Alternating Current on Fish and Aquatic Invertebrates"

Moscow, Voprosy Ikhtiologiya (Problems of Ichthyology) Vol 10, No 3, 70, pp 506-518

Abstract: This study on the influence of alternating currents on fish in various stages of life and development, in many different inland waters, covers a period of several years, and includes a great variety of fish. Trawl fishing with alternating current, the effect of current on spawning, embryo, larvae and fry and the subsequent condition of varieties of fish and their reproductive capacity, were studied. Results (summarized in five tables and a graph) show that alternating current in doses causing electronarcosis does not harm any fish in any phase of life and that from spawn to adult, fish develop normally. The catch of fish by alternating-current trawl is 125-263% above the normal. Studies on zooplankton and benthos showed that some organisms are not affected by low current intensities. Current of higher intensity stirred the little animals to a greater activity, and still higher induced electro-narcosis. Plankton and benthos revive rapidly after withdrawal of current. Only in current doses 15-126 times that necessary to induce narcosis does death occur with about 10% of the plankton and benthos surviving.

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1/2 040 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--PROTECTION OF STEEL PARTS IN CONTACT WITH A SILICATE MELT -U-

AUTHOR--ZAYTSEVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--ZASHCH. METAL. 1970, 6(2), 222-3

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METAL COATING, HEAT RESISTANT STEEL, WELDING TECHNOLOGY, MINERAL, NATURAL FIBER, INDUSTRIAL PRODUCTION, SILICATE, CHROMIUM STEEL, CHROMIUM ALLOY, NICKEL ALLOY, MOLYBDENUM ALLOY, TUNGSTEN ALLOY, CHEMICAL COMPOSITION, WEAR RESISTANT MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1786 STEP NO--UR/0365/70/006/002/0222/0223

CIRC ACCESSION NO--AP0112772

UNCLASSIFIED

2/2 040 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112772

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CENTRIFUGAL ROLL ARRANGEMENT OF MINERAL FIBER SPINNING DISKS OPERATES UNDER VERY HARSH CONDITIONS: HIGH TEMP., LARGE TEMP. GRADIENTS; AND EROSIVE FORCES. WELD DEPOSITED COATINGS WERE TESTED IN MELT CONTG. SIO SUB2 38.24, AL SUB2 O SUB3 12.1, CAO 40.8, MGO 4.49, AND MNO 0.86PERCENT AT 1340-1350DEGREES AND FEED RATES OF 1500 KG PER HR. THE DISKS WERE OF STEEL 3 CONTG. C 0.15PERCENT. THE WELD DEPOSITED COATINGS WERE SMALLER THAN OR EQUAL TO 27PERCENT CR STEELS AND CR-MO NI-BASE ALLOYS. LONG TERM WEAR AVERAGED 40-64 VS. 124 G-H PRIME2-HR FOR ST. 3. COATINGS OF AUSTENITIC HEAT RESISTANT STEEL CONTG. CR 25, NI 13, AND MN 2PERCENT AND OF HEAT RESISTANT ALLOY CONTG. NI 65, CR 14, MO 15, W 4, AND MN 2PERCENT ARE RECOMMENDED BECAUSE THEY EXTEND THE SERVICE LIFE OF THESE DISKS BY A FACTOR OF 4-5.

FACILITY: VSES. NAUCH. ISSLED PROEKT. INST. TEPLOPROEKT, USSR.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--MEANS FOR LOWERING THE CORROSION OF SOME STEELS EXPOSED TO THE ACTION OF SULFUR COMPOUNDS OF FLUE GASES -U-

AUTHOR-(02)-KUZYUKOV, A.N., ZAYTSEVA, L.V.

COUNTRY OF INFO--USSR

SOURCE--KHIM. NEFT. MASINOSTR. 1970, (3), 20-1

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SULFUR COMPOUND, CORROSION RATE, AMMONIA, CARBONATE, CARBON STEEL, CHROMIUM STEEL, METAL CORROSION TEST, ALLOY STEEL, ORE BENEFICIATION EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1675 STEP NO--UR/0314/70/000/003/0020/0021

CIRC ACCESSION NO--AP0118653

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118653

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO MITIGATE OPERATIONAL AND PROCESS DIFFICULTIES OWING TO THE SEVERE CORROSION OF PLANT EQUIPMENT MADE OF GRADE ST. 3, PLAIN C STEEL (SCRUBBERS, FLUE GAS EXHAUST TUBES, AND PIPELINES), ENCOUNTERED IN AN APATITE BENEFICIATION AND FLOTATION COBINE, AND ASCRIBED TO A COMBINED ATTACK BY SO SUB2, SO SUB3, AND H SUB2 O AT TEMPS. BELOW THE DEW PT., A SERIES OF LAB. AND ON PLANT TE TS WAS PERFORMED TO DET. THE EFFECT OF NH SUB3 AND NA SUB2 CO SUB3 SOLNS. ON LOWERING THE CORROSION OF PLAIN C AND ALLOY STEELS EXPOSED TO FLUE GAS ENVIRONMENTS CONTG. S COMPDS. INTRODUCED BY THE COMBUSTION OF S CONTG. BLACK OILS. AT 55DEGREES, THE CORROSION RATE OF THE ST. 3 STEEL IN H SUB2 SO SUB4 VAPORS (1.025 MM-YR) WAS SLIGHTLY LOWER THAN THAT IN HUMID SO SUB2 (1.61 MM-YR), WHILE STAINLESS STEELS CORRODED MORE RAPIDLY IN H SUB2 SO SUB4 VAPORS THAN IN SO SUB2. IN ADDN. TO GENERAL CORROSION, LOCAL CREVICE AND PITTING CORROSION WERE OBSD. WHEN NH SUB3 WAS INTRODUCED THE OCRROSION RATE OF THE ST. 3 STEEL WAS LOWERED BY A FACTOR OF 5.0-13.5 AND LOCAL CORROSION WAS ELIMINATED. THE CORROSION RATES OF CR STEEL GRADES WERE LOWERED BY A FACTOR OF 5-15 BUT PITTING WAS NOT AVOIDED COMPLETELY. THE ON PLANT TESTS, CONDUCTED FOR 2500 HR AT 55DEGREES, REVEALED THAT A 2-3 FOLD REDN. IN THE CORROSION RATE CAN BE EXPECTED WHEN A 10PERCENT NA SUB2 CO SUB3 SOLN. IS INTRODUCED INTO THE SCRUBBERS INSTEAD OF PLAIN WATER.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203730005-9"

USSR

UDC 019.941(05)

GOR'KOVA, V.I., MELLION, S.P., ZAYTSEVA, M.A., ARAKELOVA, L.V., KASPAROVA, V.G., GODUNOVA, L.I., and KASPAROVA, G.G.

"A System for Analyzing a Documental Information Flow Consisting of Scientific Journals"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1, Organizatsiya i Metodika Informatsionnoy Raboty, No. 4, 1971, pp 5-9

Abstract: Due partly to great irregularities in the reception of source documents by VINITI [Vsesoyuznyy Institut Nauchnoy i Tekhnicheskoy Informatsii; All-Union Institute of Scientific and Technical Information], there is a delay between the appearance of an original scientific work and VINITI's publication of an abstract of it in the appropriate Referativnyy Zhurnal (an average of 2.0-2.4 months for abstracting and editing and 1.1 month for processing are required). A study revealed that this delay could be reduced if specialized scientific journals were received directly by the editor of the appropriate abstract journal, without the usual preliminary sorting and processing. In order to carry out this study, a system for analyzing primary sources of

USSR

UDC 019.941(05)

GOR'KOVA, V.I., MELLION, S.P., et al., Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1, Organizatsiya i Metodika Informatsionnoy Raboty, No. 4, 1971, pp 5-9

information -- periodic and continuing publications -- was developed and introduced. It enabled the researchers to rank the totality of source journals in descending order of frequency of inclusion of articles from them in the abstract journal for a specific field. From this ranking, a list of the most frequently used journals was obtained for the given abstract journal.

The system for analyzing primary sources, which utilized punchcard processing equipment, the Gamma-10 machine, and a Minsk-22 computer, proved to have great potentialities for the improvement of VINITI's system of information servicing and for the development of the theoretical foundations of systems and structural analysis of information flows.

Although this research was concerned with documental information flows consisting of scientific journals, analogous investigations could be carried out for patent literature and literature of other types.

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USSR

UDC 669.71.053.4.094

SMIRNOV, M. N., VYAZOVOVA, A. A., and ZAYTSEVA, M. A.

"Interaction of Potassium-Calcium Silicate $Na_2O \cdot CaO \cdot SiO_2$ with Aluminate-Alkaline Solutions"

Tr. Vses. n.-i. i proyektn. in-ta alyumin., magn. i elektrodn. prom-sti (Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 70, pp 103-108 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G138)

Translation: A study was made of the interaction of $Na_2O \cdot CaO \cdot SiO_2$ with aluminate-alkaline solutions containing 45-86 percent Al_2O_3 and having a causticity of 1.47-1.6 at temperatures of 50 and 75°. The Na-Ca-silicate of the indicated composition interacts comparatively actively with aluminate-alkaline solutions and leads to the corresponding losses of Al_2O_3 in the form of sodium hydroalumosilicate and $3CaO \cdot Al_2O_3 \cdot nSiO_2 \cdot (6-2\ n)\ H_2O$. The losses increase with time with an increase in the Al_2O_3 concentration and the solution

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USSR

SMIRNOV, M. N., et al., Tr. Vses. n.-i. i proyektn. in-ta alyumin., magn. i elektrodn. prom-sti (Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 70, pp 103-108 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G138)

temperature, and they reach 6-8 percent in two hours. There is no strict relation between the degree of decomposition of the Na-Ca-silicate and the Al_2O_3 losses. This is connected with complexity of the process of decomposition of this compound. The point of view of the authors with regard to the schematic of the given process is discussed. There are 2 tables and a 6-entry bibliography.

2/2

UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 013

TITLE--HEAT STABLE POLISHING ABRASIVE CLOTHS -U-

AUTHOR-(05)-POPENKOVA, Z.N., ZAYTSEVA, M.A., KOGAN, L.A., DREBENTSOVA, A.A., POLESHCHUK, I.P.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,752

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ABRASIVE, CORUNDUM, LATEX, PATENT, POLYMER BINDER/(U)SKS30 STYRENE RUBBER, (U)SVKH7 SYNTHETIC RUBBER, (U)FM3 RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0482/70/000/000/0000/0000

PROXY REEL/FRAME--3007/1761

CIRC ACCESSION NO--AA0137001

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0137001

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEAT STABLE ABRASIVE POLISHING CLOTH CONSISTS OF A FIBER BASE FINISHED WITH SKS-30 AND SVKH-I LATEXES IN A 1:1 RATIO. ABRASIVE MATERIAL CONSISTING OF WHITE "MICROPOWDER" AND CR ELECTROCORUNDUM WITH A COARSE FRACTION CONTENT OF SMALLER THAN OR EQUAL TO 7PERCENT IS APPLIED TO THE BASE. SYNTHETIC RESIN FM-3 WITH A LOWERED STICKINESS OF 140-5 SEC IS USED AS A BINDER.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ABSORPTION SPECTRUM OF PRASEODYMIUM ACETATE TETRAHYDRATE SINGLE CRYSTALS -U-

AUTHOR-(03)-PETROV, K.I., ZAYTSEVA, M.G., ORLIN, N.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(5), 868-71

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ABSORPTION SPECTRUM, LIGHT ABSORPTION, CRYSTAL HYDRATE, PRASEODYMIUM COMPOUND, ACETATE, IONIC BONDING, COVALENT BONDING, ELECTRIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1417 STEP NO--UR/0368/70/012/005/0868/0871

CIRC ACCESSION NO--AP0135091

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0135091
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABSORPTION SPECTRA OF PR(OAC) SUB3 .4H SUB2 O IN THE 4000-9000 ANGSTROM REGION AT 77DEGREESK WERE INVESTIGATED BY USING NATURAL AND POLARIZED LIGHT TO CLASSIFY THE ELECTRON TRANSITONS, THE SYMMETRY OF THE CRYST. FIELD, AND THE CHARACTER OF THE INTERACTION OF PR PRIME3POSITIVE WITH ITS SURROUNDING ATOMS. THE SPLITTING OF THE LEVELS INDICATE THE LOW SYMMETRY OF THE CRYST. FIELD. THE SMALL DIFFERENCE BETWEEN THE POSITIONS OF THE CENTERS OF GRAVITY OF SLJ LEVELS OF PR PRIME3POSITIVE IN CRYSTALS AND IN THE FREE ION INDICATE THE PREDOMINANTLY IONIC CHARACTER OF BONDING IN THE CRYSTALS. THE COVALENT FRACTION IN THE BOND IS ESTD. MORE QUANT. BY USING SLATER INTEGRALS AND IS OF THE ORDER OF A FEW PERCENT.

UNCLASSIFIED

ZAYTSEVA, N.A.

SO: JPRS 54435
9 Nov 71

UDC: 612.647'822:612.398.192

CHANGES IN THE GLUTAMIC ACID — GLUTAMINE -- GAMMA-AMINOBUTYRIC ACID SYSTEM IN THE HUMAN FETAL BRAIN DURING PRENATAL DEVELOPMENT

[Article by T.A. Shvets, [illegible] Zaytseva, Donetsk Medical Institute; Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 9, 1971, pp 88-90]

Glutamic acid (GA) is one of the most intensively oxidized amino acids of brain tissue (Quastel and Weastley); other amino acids are oxidized very slowly (Edlbacher and Wiss).

At the present time it is recognized that G A participates in removal of ammonia by means of glutamine synthesis (A.Ye. Braunshteyn; D.L. Ferdman; Ye. A. Vladimirova; Archibald; Weil-Malherbe, 1950). Synthesis of the latter is an endergonic process and is catalyzed by the enzyme, glutamine synthetase (S.F. Epshteyn, 1948; Elliott, 1948; Speck, 1949). Glutamine synthesis in the brain has been observed by many researchers (S.F. Epshteyn; D.L. Ferdman and S.F. Epshteyn; Ye.A. Vladimirova; Krebs; Richter and Dawson; Weil-Malherbe, 1935), and it is believed to be the most active process in brain cells (G. Ach et al.).

There is a considerable amount of gamma-aminobutyric acid (GABA) in brain tissues (Awapara et al.; Roberts et al.). It has been shown that GABA is formed from GA through decarboxylation by specific decarboxylase (Roberts and Frankel, 1950, 1951a and b; Wingo and Awapara).

According to the data of these authors, the brain of different animals contains about 150 mg% of glutamic acid, 50-100 mg% glutamine, and about 20-64 mg% GABA. There are not enough data on the levels of these substances in the tissues of the human brain. We only know that in the grey matter of the human brain there is 45 mg% GABA and in the white matter 23.5 mg% (Roberts et al.).

For this reason we investigated the GA, GABA, and glutamine content, as well as glutamine synthetase activity, in the tissues of the human fetal brain throughout the prenatal period.

Material and methods of investigation. Brain tissue from human fetuses, obtained following criminal and artificial abortions, ranging in age from 5 to 40 weeks, served as our material. The organ was rapidly extracted and the blood washed off with cooled saline, and it was examined under refrigeration.

UDC 616.988.75-053.2

USSR

CHESHIK, S. G., RODOV, M. N., IVANOVA, L. A., ZAYTSEVA, N. D., and KHOLODZHAN, S. YE., Clinical Department, Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, and City Clinical Hospital of Infectious Diseases No 82, Moscow

"Clinical Picture and Diagnosis of Hong-Kong A2 Influenza in Children"

Moscow, Pediatriya, No 5, May 71, pp 92-93

Abstract: During the peak of the Hong-Kong A2 influenza epidemic in 1969, the frequency of acute respiratory diseases increased 8.4 times among adults, 7.9 times among children aged 7-14, and only 2.4 times among children aged up to 2 years. Nevertheless, in absolute figures, the frequency was highest in the last group, because the pre-epidemic morbidity among small children was very great. Serological and fluorescent antibody tests performed on hospitalized patients in December 1968 through March 1969 revealed that all respiratory diseases identified in the pre-epidemic period were also diagnosed during the epidemic, though their relative proportions were somewhat smaller: 28.3% in December, 25.4% in January, and 10.4% in February. This makes it necessary to perform differential diagnoses of viral respiratory diseases in hospitals in order to distribute the patient in proper wards. Of the 122 children hospitalized with diagnosed influenza, 74 developed complications;

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CHESHIK, S. G., et al., Pediatriya, No 5, May 71, pp 92-93

45 developed pneumonia, 9 developed bronchitis, and 20 developed other diseases. Among infants, toxicosis was less pronounced which developed in 47% of infants up to the age of 1 year and in 73% of infants aged 1 to 3 months. Among the youngest infants, pneumonia often developed suddenly and progressed with a fatal speed. Therefore, it is necessary to hospitalize these children regardless of the severity of the influenza.

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1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--CHEMICAL FORMS OF THE STABILIZATION OF ATOMS OF RADIOACTIVE RHENIUM FORMED DURING THE IRRADIATION OF SOME INORGANIC RHENIUM COMPOUNDS WITH

AUTHOR-(02)-ZAYTSEVA, N.G., IANOVIC, E.

COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(1), 143-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RHENIUM COMPOUND, ORGANIC CHEMISTRY, RADIOACTIVE SOURCE, CHLORIDE, AMMONIUM COMPOUND, SODIUM COMPOUND, POTASSIUM COMPOUND, CHEMICAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1725 STEP NO--UR/0186/70/012/001/0143/0148

CIRC ACCESSION NO--AP0125346

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0125346

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NAREO SUB4, KREO SUB4, NH SUB4 REO SUB4 AND K SUB2 RECL SUB6 WERE IRRADIATED FOR 10-15 HRS WITH 660-MEV P, AT 24-5DEGREES, IN A FLUX OF 10 PRIME8 -10 PRIME10 P-(CM PRIME2 -SEC). IN THE NAREO SUB4 AND KREO SUB4, THE RADIOACTIVE RE ISOTOPES (RE) FORMED THROUGH THE RE(P,PXN)RE REACTION WERE QUANT. STABILIZED AS THE STARTING COMPD., I.E. IN THE HEPTAVALENT FORM; IN NH SUB4 REO SUB4 66.6PERCENT OF THE RE WAS STABILIZED AS THE STARTING COMPD. BUT THE REST WAS STABILIZED AS TETRAVELENT RE, I.E. THE NH SUB4 HAD A REDUCING EFFECT. IN THE IRRADN. OF SOLID K SUB2 RECL SUB6, SIMILAR TO 69PERCENT OF THE RE WAS STABILIZED AS THE STARTING COMPD., BUT IN THE IRRADN. OF K SUB2 RECL SUB6 SOLNS. IN 4 M HCL ONLY 2.7PERCENT OF THE RE REMAINED AS THE STARTING COMPD.; IT IS ASSUMED THAT THE FREE RADICALS FORMED IN THE IRRADN. REACT WITH THE AQ. SOLN. SO THAT THE RE IS STABILIZED AS SPECIES OTHER THAN THE STARTING COMPD. (E.G., RE CL SUB5 PRIME NEGATIVE, RE CL SUB3 PRIME NEGATIVE, RE CL SUB2 PRIME2 POSITIVE, ETC.). THE STABILIZATION OF RE AS THE STARTING COMPD. WAS EITHER INDEPENDENT OF THE P FLUX (IN THE CASE OF NAREO SUB4) OR INCREASED SOMEWHAT WITH INCREASING FLUX (IN THE CASES OF NH SUB4 REO SUB4 AND K SUB2 RECL SUB6).

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--MEASUREMENT OF HALF LIVES OF THE FIRST EXCITED 2 PLUS STATES OF OSMIUM-184, OSMIUM-186, AND OSMIUM-188 -U-

AUTHOR-(05)-BEDICA, T., ZAYTSEVA, N.G., MOROZOV, V.A., MUMINOV, T.M., SELEGEANU, S.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(3), 481-2

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--RADIOACTIVE DECAY SCHEME, OSMIUM ISOTOPE, EXCITED NUCLEUS, COINCIDENCE COUNTING, NUCLEAR ENERGY LEVEL, HALF LIFE

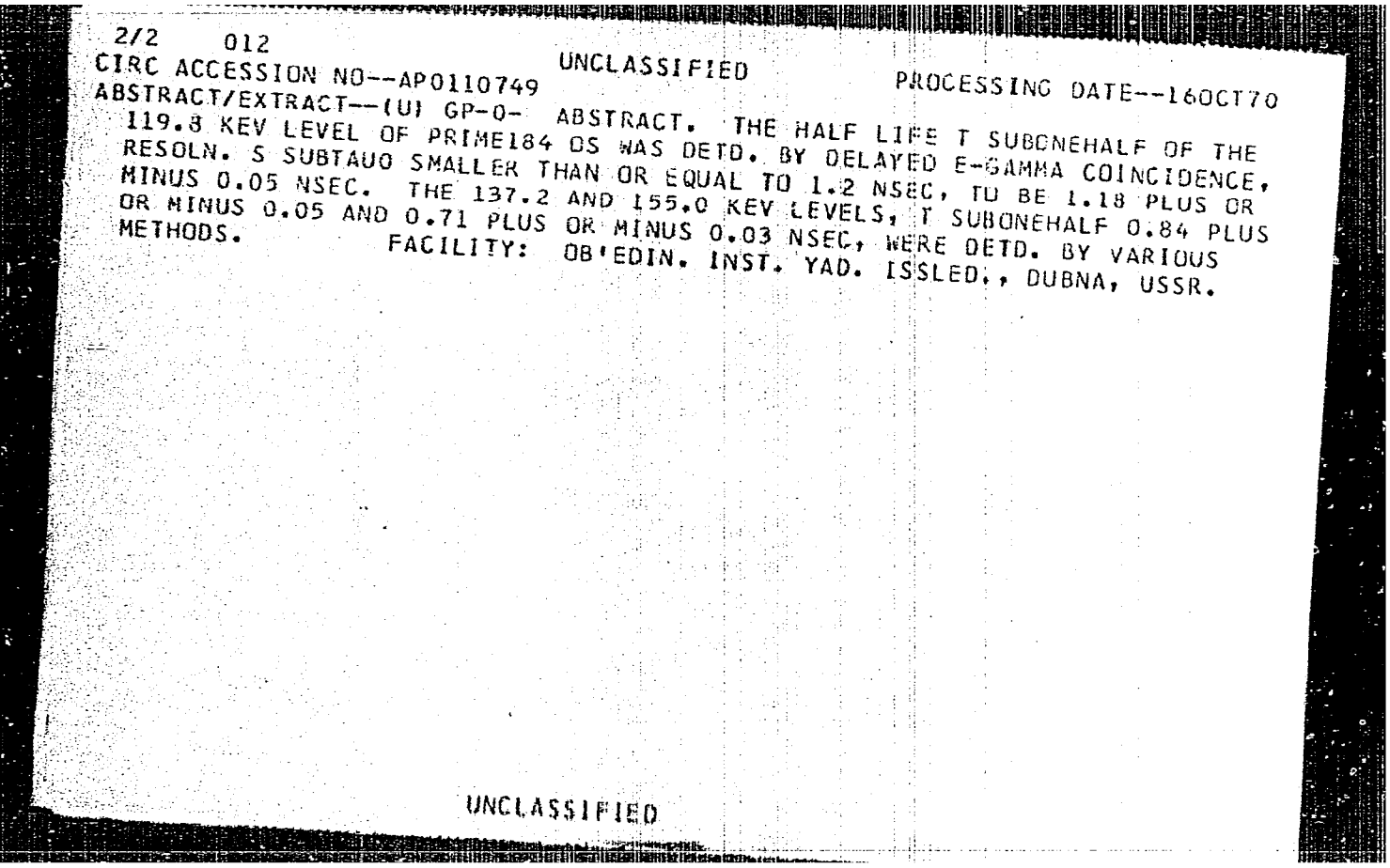
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/1059 STEP NO--UR/0367/70/011/003/0481/0482

CIRC ACCESSION NO--AP0110749

UNCLASSIFIED



2/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0110749

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HALF LIFE T SUBONEHALF OF THE 119.8 KEV LEVEL OF PRIME184 OS WAS DETD. BY DELAYED E-GAMMA COINCIDENCE, RESOLN. S SUBTAUO SMALLER THAN OR EQUAL TO 1.2 NSEC, TO BE 1.18 PLUS OR MINUS 0.05 NSEC. THE 137.2 AND 155.0 KEV LEVELS, T SUBONEHALF 0.84 PLUS OR MINUS 0.05 AND 0.71 PLUS OR MINUS 0.03 NSEC, WERE DETD. BY VARIOUS METHODS. FACILITY: OB'EDIN. INST. YAD. ISSLED., DUBNA, USSR.

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0133575

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXOGENOUS DELTA-AMINOLEVULINIC ACID (ALA) WAS REQUIRED FOR SYNTHESIS OF PORPHYRINS AND STIMULATED VITAMIN B SUB12 SYNTHESIS IN METHANOBACILLUS KUZNECEOVII CULTURES. TOTAL SYNTHESIS OF VITAMIN B SUB12 AND PORPHYRINS FROM ALA SEEMS TO INVOLVE FORMATION OF PORPHOBILINOGEN DURING ALA-DEHYDRATASE ACTION. THIS ENZYME WAS PRESENT IN M. KUZNECEOVII ACELLULAR EXTS., AND THE ACTIVITY WAS NOT AFFECTED BY ADDN. OF VITAMIN B SUB12 OR HEMIN IN VITRO. ALA-DEHYDRATASE ACTIVITY WAS INCREASED BY ZN AND ESP. BY CO PRIME2 POSITIVE AND WAS INHIBITED BY CHELATING AGENTS. INHIBITION DECREASED IN THE PRESENCE OF METALLIC IONS. FACILITY: INST. BIOKHIM. IM. BAKHA, MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--REGULATION OF THE BIOSYNTHESIS OF VITAMIN B SUB12 AND PORPHYRINS IN PROPIONIBACTERIUM SHERMANII -U-

AUTHOR-(03)-ZAYTSEVA, N.I., BYKHOVSKIY, V.YA., BUKIN, V.N.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1476-9

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BIOSYNTHESIS, VITAMIN, PORPHYRIN, BACTERIA, ZINC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0888 STEP NO--UR/0020/70/190/006/1476/1479

CIRC ACCESSION NO--AT0129957

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0129957

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DELTA AMINOLEVULINIC ACID DEHYDRATASE (I) ACTIVITY OF P. SHERMANII ACELLULAR EXTS. OBTAINED FROM CELLS CULTIVATED IN HEMIN WAS SIGNIFICANTLY LOWER THAN THE ACTIVITY IN CONTROL CELLS, BUT THE ACTIVITY OF EXTS. FROM CELLS GROWN IN THE PRESENCE OF VITAMIN B SUB12 WAS THE SAME AS IN THE CONTROLS. TREATMENT OF THE PARENT CELLS WITH ZN OR CO SALTS INCREASED I ACTIVITY. MN, MG, FE, AND NI WERE INEFFECTIVE. EDTA AND 8,HYDROXYQUINOLINE REDUCED I ACTIVITY IN CELL FREE EXTS., SPECIFICALLY DUE TO INHIBITION OF ZN PRIME2POSITIVE. HEMIN SEEMED TO INHIBIT FORMATION OF BOTH I AND PORPHOBILINOGEN. THE REACTIORI OF VITAMIN B SUB12 SUGGESTS THAT ITS ACTION IS DIRECTED TOWARD ENZYMIC SYSTEMS SPECIFIC FOR ITS OWN SYNTHESIS. I SEEMS TO BE ZN ACTIVATED OR ZN CONTG. FACILITY: INST. BIOKHIM. IM. BAKHA, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr. AP0041496 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code UR0411

87451f Effect of S-methylmethionine (vitamin U) on vitamin B_{12} biosynthesis by Propionibacterium shermanii. Bykhovskii, V. Ya.; Zaitseva, N. I.; Khuchua, G. N. (A. N. Bakh Inst. Biochem., Moscow, USSR). *Prikl. Biokhim. Mikrobiol.* 1970, 6(1), 75–8 (Russ). S-Methylmethionine (vitamin U) stimulated the formation of vitamin B_{12} and simultaneously inhibited the synthesis of porphyrins by *P. shermanii* under each physiol. state studied, suggesting that this compd. is an active Me group donor. Vitamin B_{12} synthesis increased under the action of S-methylmethionine to about an equal extent in both developing cultures and in suspensions of resting propionic acid bacteria cells. δ-Aminolevulinic acid (3 mg/100 ml medium) further stimulated vitamin B_{12} formation only in the resting cell suspensions. BJJR

REEL/FRAME
19751364

USSR

UDC 612.273.1:577.3

MATSYNIN, V. V., ZAYTSEVA, N. P., and POLYANCHUK, M. V., Hypoxia and Hyperoxia Laboratory, Institute of Physiology imeni A. A. Bogomolets, Academy of Sciences UkSSR

"State of Oxidative Processes in the Livers of White Rats at Different Times After Exposure to Hyperoxia"

Kiev, Fiziologichniy Zhurnal, No 3, 1971, pp 391-396

Abstract: Free respiration and phosphorylation were studied in liver homogenates and mitochondria from white rats exposed to toxic doses of hyperoxia (4 ata) for 60 minutes. In one series of experiments, observations were conducted immediately after recompression; in another series, on the second day. In both series there was a decrease in conjugation of free oxidation and phosphorylation, as determined from the value of the respiratory control. The respiratory control decreased in most cases because of the relatively smaller increase in respiratory rate of the mitochondria and homogenates in a medium with phosphate acceptors (ATP+hexokinase+glucose) added. This phenomenon was observed both immediately following recompression and on the second day thereafter.

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UDC 576.858.098.396.332.083.1

GAYTSKHOKI, V. S., YERSHOV, F. I., KISELEV, O. I., MEN'SHIKH, L. K., ZAYTSEVA O. V., YRIVAYEV, L. V., ZHDANOV, V. M., and NEYFAKH, S. A., Institute of Experimental Medicine, USSR Academy of Medical Sciences, Leningrad, Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Replication of Infectious Viral RNA in Isolated Mitochondria. Report I: Penetration of Viral RNA Into Mitochondria and Its Effect on Mitochondrial Synthesis"

Moscow, Voprosy Virusologii, No 3, May/Jun 71, pp 269-273

Abstract: Isolated rat liver mitochondria were incubated in a medium promoting oxidative phosphorylation and protein and RNA biosynthesis. H^3-RNA of Venezuelan equine encephalitis virus was added. It was found that after incubation, approximately 72% of the introduced radio-activity was in the mitochondria. It was concluded that the emergence of H^3-RNA of the virus in the mitochondria is not due to adsorption of RNA on the surface of these structures; instead, the cell fluid and actinomycin D stimulated RNA penetration. The distribution of viral RNA in mitochondrial subfractions was studied. Approximately 64% of the labeled RNA was found in the internal membrane and matrix fraction. Inhibition of RNA synthesis of mitochondrial protein was observed. The fraction of actinomycin-resistant protein synthesis

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203730005-9"

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GAYTSKHOKI, V. S., et al., Voprosy Virusologii, No 3, May/Jun 71, pp 269-273

increases sharply. It was concluded that there maybe a link between the restructuring of mitochondrial ribosomes and the synthesis of mitochondrial proteins and virus-specific syntheses.

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UDC 576.858.098.396.332.083.1

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YERSHOV, F. I., GAYSKHOKI, V. S., KISELEV, O. I., ZAYTSEVA, O. V., MENSHIKH, L. K., URYVAYEV, L. V., NEYFAKH, S. A., and ZBDANOV, V. N., Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow, Institute of Experimental Medicine, USSR Academy of Medical Sciences, Leningrad

"Replication of Infectious Viral RNA in Isolated Mitochondria. Report II: Replication of Viral RNA in Mitochondria and Characteristics of the Final Product"

Moscow, Voprosy Virusologii, No 3, May/Jun 71, pp 274-280

Abstract: It was of interest to establish whether isolated mitochondria could replicate virus RNA, that is whether "bacterial" ribosomes could synthesize the functionally active RNA polymerase, and whether the final product of virus-specific synthesis has infectious properties. H^3-RNA isolated from purified Venezuelan equine encephalitis virus was used to study the function of virus RNA emerging in mitochondria. Contact between mitochondria and RNA was 30 minutes at 0°C. After this, the mitochondria were incubated under aerobic conditions for 2 hours at 37°C. After termination of the incubation period, RNA was separated by the phenol deproteinizing method and analyzed in a sucrose density gradient (5-30%). Peaks were found in the 40S and 26-20S region. The 40S area corresponds to RNA-ase and the 26-20S area to ribonu-

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YERSHOV, F. I., et al., Voprosy Virusologii, No 3, May/Jun 71, pp 274-280
clease-resistant material, the replicative form of viral RNA. The data obtained indicate that the predominant portion of viral RNA appearing in mitochondria does not participate in the replication process and its dehydration products show up in the top zone of the gradient. No radioactive products of mitochondrial RNA translation were detected, which can be explained by the effective concentration of actinomycin D. As the newly synthesized RNA forms complexes with proteins, infectious activity increases. The complexes formed have subcellular structures and are separated from infected cells.

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UDC 576.858

USSR

GAYTSKHOKI, V. S., YERSHOV, F. I., KISELEV, O. I., MEN'SHIKH, L. K., ZAYTSEVA, O. V., URYVAYEV, L. V., ZHDANOV, V. M., Member of the Academy of Medical Sciences USSR, and NEYFAKH, S. A., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow, and Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"Reconstruction of the Autonomous Genetic and Protein-Synthesizing System from Virus RNA and Isolated Mitochondria"

Moscow, Doklady Akademii Nauk SSSR, Vol 201, No 1, 1971, pp 220-223

Abstract: In experiments performed on isolated mitochondria of rat liver incubated with H^3-RNA obtained from purified Venezuelan equine encephalomyelitis virus, it was demonstrated that the virus RNA enters the mitochondria and is incorporated into their autonomous system of protein synthesis, for which the mitochondria supply the necessary energy. Transcription of the mitochondrial DNA is inhibited, the virus RNA is replicated, and thus virus proteins are synthesized.

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UNCLASSIFIED PROCESSING DATE--020CT70

1/2 022

TITLE--DYNAMICS OF THE ZONE OF CORPUSCULAR INJECTIONS -U-

AUTHOR-(03)-ZAYTSEVA, S.A., PUDOVKIN, M.I., SHUMILOV, O.I.

COUNTRY OF INFO--USSR

SOURCE--RAZDEL IV, POLYARNYYE SIYANIYA, 1970, NR 19, PP 42-50

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, ASTRONOMY,ASTROPHYSICS, ATMOSPHERIC SCIENCES

TOPIC TAGS--GEOMAGNETIC STORM, POLAR AREA, SOLAR CORPUSCULAR RADIATION, SOLAR WIND, MAGNETOSPHERE, AURORA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0118 STEP NO--UR/3307/70/000/019/0042/0050

CIRC ACCESSION NO--AP0114514

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0114514

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER ANALYSES CERTAIN PHENOMENA OF THE POLAR MAGNETIC STORM AND DESCRIBES THE CHARACTERISTIC FEATURES OF ITS DEVELOPMENT. AT THE START OF THE DISTURBANCE THE ARCS ARE DISPLACED TO THE EQUATOR. FURTHER EXPANSION OF THE AURORA BELT IS ACCOMPANIED BY A CONSIDERABLE SHIFT OF THE SOUTHERN BOUNDARY OF THE BELT TO THE EQUATOR. THE LONGITUDINAL DRIFT TO THE REGION OF INJECTION OF CORPUSCULAR STREAMS IS STUDIED ON THE BASIS OF THE DATA ON BAY LIKE DISTURBANCES AND OF THE DATA ON AURORAE ABSORPTION. THE REGION OF INJECTION OF THE PROTONS DIRFTS FROM THE MIDNIGHT MERIDIAN TO THE WEST AND THE TOTAL REVOLUTION AROUND THE EARTH IS APPROXIMATELY ONE HOUR. THE INJECTION REGION OF THE ELECTRONS DRIFTS FROM THE WEST TO THE EAST. THE MEAN ENERGY OF ELECTRONS TAKING PART IN SUCH GRADIENT DRIFT IS ABOUT 100 KEV. THE PAPER STUDIES THE TIME CONNECTION BETWEEN THE BAYS IN THE AURORAE ZONE AND THE MAGNETIC POLE VARIATIONS ON THE EQUATOR. 1-2 HOURS BEFORE THE MAXIMUM OF THE BAY IN THE AURORAE ZONE A SLIGHT INCREASE OF THE H COMPONENT IS OBSERVED ON THE EQUATOR. THE OBTAINED DEPENDENCE IS INTERPRETED AS THE RESULT OF THE INCREASE OF SOLAR WIND PRESSURE ON THE MAGNETOSPHERE.

UNCLASSIFIED

Environmental & Ecological Problems

USSR

ZAYTSEVA, V.

"The City: Today and Tomorrow"

Moscow, Meditsinskaya Gazeta, 12 Oct 73, p 2

Translation: Our era has been called atomic and cosmic; but there can be no doubt that it will be entered in the pages of history as the era of large cities. In our country sixty percent of the population is urban. Every year twenty new cities appear in our country, and over fifty settlements which are city-like in nature. By 1980 the population of our cities will reach 170 to 180 million, and by the year 2000 it will stand at 240 to 250 million.
What should a city be like?
Our understanding of present-day cities and cities of the future encompasses a whole series of complex factors. This includes the distribution of industrial zones, living areas, and social and cultural centers, as well as everyday domestic enterprises and means of transportation. The problem lies in the proper location of each of these necessities in a manner which will assure the population of proper work, recreation, and living conditions.
These questions were discussed by the participants of the conference held in Moscow entitled "Climate -- City -- Humanity."
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ZAYTSEVA, V., Meditsinskaya Gazeta, 12 Oct 73, p 2

The scientists discussed a number of problems which are current today and will affect the near future, with the participation of ministerial representatives and members of city department. The majority of the participants regarded public health problems as being of major importance. The correct and timely solution of these problems will determine to a large extent the state of man, city, and the environment.

Numbers and Facts

More than 1,000 specialists participated in the Conference: architects, hygienists, climatologists, geographists, geologists, and construction engineers. Guests from the brother socialist republics were also present and participated with a series of presentations; a delegation of Italian ecologists also attended the conference. Over 150 reports and communications were heard.

An exhibit was opened during the Conference. Represented were plans for residential areas in the cities of Siberia, the Far East, and the southern and northern parts of our country, and plans for residential and public buildings which encompassed solutions to hygienic and architectural problems. The attention of the visitors was also attracted to modern purification instruments of large plants and cities.

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USSR

ZAYTSEVA, V., Meditsinskaya Gazeta, 12 Oct 73, p 2

The Conference was terminated with an interesting and satisfying excursion in Moscow, The visitors became acquainted with new residential sections of the capital, the principles, on which they are based, and their architecture.

What the Facts Show

Why is the environment the subject of such sharp arguments and careful attention.

Man is a part of nature. It is appreciated that the health and well-being of man depends on the state and conditions of the environment. However, the state of the biosphere has deteriorated considerably during the recent decades. The reason lies in the fact that for many years people depleted natural resources without due considration to their replenishment. Plants emit gases and dirt particles into the air and contaminate reservoirs with industrial wastes. Scientific and technological progress and the intense development of industry, transportation, and population growth further affected Nature.

According to K. Bushtuyeva, Head of the Department of Communal Hygiene at the Central Institute for the Advanced Training of Physicians, the incidence of certain nonspecific chronic diseases has also increased.

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ZAYTSEVA, V., Medtsinskaya Gazeta, 12 Oct 73, p 2

The Party and the government of our country are very much concerned with the protection of nature. The CC of the CPSU and the Council of Ministers USSR have passed a resolution entitled "Intensification of Nature Protection and Utilization of Natural Resources," and the fourth session of the USSR Supreme Soviet has passed the following resolution: "On Measures for Further Improvements in the Protection of Nature and Rational Utilization of Natural Resources." They are designed for improving the environment, the prevention of further contamination of the atmosphere, water reservoirs, and soil, and to increase tree planting.

In our country mush has been done -- particularly in the last decade -- to restore and improve the urban environment. Thus, purification plants are being constructed, their effectiveness is being increased, and in industry new technological processes are being introduced which eliminate waste matter, such as closed cycles. Significant progress in urban environmental improvement has been achieved in Moscow, Krivoy Rog, Cherepovets, Leningrad, and Zhdanov.

M. Beryland reported at the Conference that, in view of the current plans, it is possible to guarantee adequate purity standards of the air in industrial rayons by regulating the height of the purification chimneys at the plants. For instance, construction of a 250 meter chimney at an electric station will purify the smoke gases by 99%.

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USSR

ZAYTSEVA, V., Meditsinskaya Gazeta, 12 Oct 73, p 2

In connection with this a problem has arisen which is being discussed by architects and public health physicians. It consists of the following. For many years people have been protected from harmful industrial wastes by the creation of protective sanitary zones. They serve as a barrier between the industrial concern and the people. Nothing is done there. As a rule, they overgrow with vegetation and contribute to public welfare. The success of these zones is unquestionable in contributing to a healthy environment. However, the architects have raised the argument that since the high chimneys are effective there is no need for such zones. They hold that since emissions do not endanger anyone because of their height, there is no need for conserving valuable urban land.

The Chief Sanitary Physician of the SFSR, K. Akulov, criticized the opponents of such sanitary zones. He pointed out that life itself bore out their usefulness and positive effects on the health of man. Arguments against sanitary protective zones are indefensible. Only when the industry can completely eliminate chimneys and purification instrumentation has reached such a state of perfection as to allow complete operation of closed cycles, will public health physicians and sanitary official agree that protective zones are unnecessary.

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ZAYTSEVA, V., Medtsinskaya Gazeta, 12 Oct 73, p 2

In regulating the levels of waste emission by plants our scientists have proposed a method which makes it possible to determine the level of pollution. On the basis of this, recommendations may be formulated for improving the atmosphere, as has been done in Baku.

However, unsolved problems still exist. At a number of plants there are "explosive" short-term emissions of pollutants. Under adverse atmospheric conditions this has a negative effect on the environment and the health of people. But there is a simple solution; stop atmospheric pollution, even for a short period of time, if the weather conditions are bad. In those cities where this is practiced the results are encouraging.

With the increase in the size of a city the pollution of the air also increases. Under these conditions regulating bodies are important, as emphasized by the Conference participants. At the public health stations laboratories have been created and these are also present at large industrial enterprises. The hydrometereological service also has its sub-branches. Future success will depend on their work.

Unorganized pollution was also discussed. That is to say, waste emission which is not regarded as significant by a plant (a metallurgical plant, for example). As a rule they are emitted from short chimneys and pollute the environment. It is this type of pollulation that may completely negate the most effective methods of purification. Such practice must be discontinued.

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Nevertheless, much has been done by the industrial concerns. Their efforts make it feasible to predict that in time all of our industrial complexes shall become similar to the chemical combine in the city of Kedaynyaye in the Lithuanian SSR, where bees collect nectar from flowers growing next to the plant.

Hygienic Prognoses

The question which at the present time is of great concern to architects, economists, planner, and hygienists may be stated as follows: how should the various industrial enterprises be located, and what plans should be made for the creation of high standard muncipal industrial and residential rayons. Each of these factors must be considered separately with the recognition that they are interdependent. These problems cannot be resolved without meeting public health standards and requirements. Only on the basis of the latter considerations would it be possible to account for all the adverse effects and determine the distribution of industrial sections, as well the necessary prophylactic measures which must be taken to protect the health of the people. Unfortunately, in a number of cases such guidelines are lacking.

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And this is why their discussion has become the order of the day. Scientists must take a leading role here.

What directions should important public health research take? This has been considered in detail by Prof. G. Sidorenko, director of the Institute of General and Communal Hygiene imeni A. N. Sysin of the USSR Academy of Medical Sciences.

He pointed out that in our country major responsibility for preservation of the environment is borne by the ministries and services. Presently they are developing appropriate measures to protect the environment from pollution and for the preservation and restoration of nature. Hygienic research, which is designed to determine the optimum measures will assist in the selection of the proper directions to be taken in such endeavors. The hygienists must determine the allowable levels of harmful substances in the air, soil, and water and set All-Union standards for the environment.

We know that a given substance may enter an organism through various routes. But how are its complex effects to be evaluated? This is a complex problem. These effects do not enter into determinations of the levels of concentration of this substance in atmospheric air, air in factory workshops,

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water, and food. And yet, this must be known. In other words, a single hygienic standard must be established.

In modern times human health can be affected by many chemical substances which surround us in residential and industrial areas. The investigators must be prompt in determining allowable concentrations of these substances and developing the needed methods for this, and study their effects on the organism; delayed consequences such as allergy, heredity, and so on must also be considered. Foreign scientists have predicted the death of our planet from a "revolt of nature." We cannot agree with this hypothesis since practice has already shown that the environment can be protected adequately. Recognition by scientists that it is their responsibility to provide the answers makes them more dutiful and active in this respect.

Noise Does Not Rest

Cut down on the noise! This is a cry that can be heard more and more often from inhabitants of larger cities. Research has already shown that noise affects the nerves, decreases work capability, and infrequently leads to serious diseases. The noise level is still high in Moscow, Minsk, Lvov, and Novosibirsk.
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Under such conditions a person tries to get some peace and quiet at home.

A noise intensity map for the different residential rayons of Moscow has been prepared by sanitation specialists and Moscow acousticians, and shows that certain rayons have adverse noise levels, indications that things are no better in certain other large centers may be found in the report submitted by I. Karagodina, head of the laboratory at the Moscow Hygiene Scientific Research Institute imeni Erisman. She reported the following fact. Among the complaints received at public health stations 68-80 percent deal with lack of rest due to noise. According to I. Karagodina, the noise level in many residential rayons is not only determined by automobile traffic -- although this alone contributes about 80 percent of the noise. The cities also contain railroad tracks. Nevertheless, in some cities residential areas continue to be built in proximity to railroad tracks. Subways have appeared in a number of large cities. Among these cities are Leningrad, Tbilisi, Baku, and Kiev. Soon we will have to add Kharkov and Tashkent. In addition, in some cases shallow construction is in effect and, consequently, not only noise but also low-frequency vibrations affect the houses.

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ZAYTSEVA, V. , Medtsinskaya Gazeta, 12 Oct 73, p 2

The increasing size of large cities has extended the boundaries of new residential areas close to aeroports, which make an additional contribution to the noisy climate.

Is there a solution? What is being done to regulate noise? Many people are concerned by these questions.

Conference participants felt that the scientists and practical workers of our country possess adequate information on noise regarding its sources and acceptable levels; significant progress has been made in scientific development of public health measures for decreasing noise levels. In this struggle the political stance must be inflexible.

Above all, the workers of the sanitary and epidemiologic stations must be vigilant and must not permit construction of residential buildings near noisy boulevards, expressways, and railroads. Such stations possess the legal rights to conduct their work successfully. Acoustic laboratories must also be established at these stations. As has been shown in Moscow, Leningrad, and Kiev, such laboratory specialists can successfully resolve these problems. First of all, they can coordinate the work that is being done. In addition, even in adverse environmental situations, they can still render the appropriate

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prophylactic measureas where construction has begun and plans made, and directly approach the local soviets (councils) with clear proposals.

The possibilities are tremendous when city planning is approached wisely. The noise level can be regulated by the construction of byways, wider street, and underground passageways. It is especially important to take this into consideration in the case of cities still in the planning stages of the architects. On how well these problems are solved today rests the health of future generations.

However, each of us is able to do something about noise. Each of us reacts to noise in his own way. This is to a large extent determined by age, temperament, the state of health, and surrounding conditions. Nevertheless, one principle which applies to all cases is the fact that we are bothered by the noise made by others. A neighbor may turn his television set on to full volume, or a party goes on in the next apartment well past midnight. We notice this immediately and react sharply. However, when we do the same our attitude is different. The conclusions to be reached are obvious: there is need for more mutual respect.

The maintenance of comfortable noise levels in a city is a very complex problem. Here it is necessary to combine the efforts of various specialists, interested governing bodies, and departments. Only then can we hope to "retire" noise.

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ZAYTSEVA, V., Medtsinskaya Gazeta, 12 Oct 73, p 2

Green "Vacuum Cleaners"

Under the influence of scientific and technological progress many old problems have assumed new aspects. The same applies to tree planting. People have recognized for a long time that vegetation improves the microclimate, changes thermal conditions, moisturises and purifies the air, enriches the air with oxygen, and kills disease causing germs. Nevertheless, plants were primarily regarded as an element of beauty. However, the times have required a re-evaluation of vegetation. Now we must give due consideration to their effect on health. One of the factors to be considered is a psychoprophylactic effect on people. It is obvious that the dimensions of the green areas in cities must be enlarged. Each one of us must be satsified that this is happening.

In our cities new parks and tree parks are appearing, as well as boulevards and green zones. At one time tree planting was considered in terms of the density of vegetation. As a result of this green areas appeared which were neither esthetic nor contributory to health. At the present time this is being avoided. We may mention a number of cities where tree planting has been conducted on a large scale -- Moscow, Minsk, Tashkent, and Donetsk - - and beautiful terrains have been created through the utilization of natural landscapes.

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Have you ever considered why we are so attracted to old cities? It is their appearance which was created over centuries. Today cities are created within a matter of decades or even a shorter period of time. Examples of these are Bratsk, Navoi, Togliatti, and Naberezhnyye Chelny. Situations such as that mentioned by A. Plyasunov and N. Zharkova, collaborators of the Kuybyshev Scientific Research Institute of Epidemiology and Hygiene, are not rare. In the new residential rayons of Togliatti little space has been allocated to intrarayon gardens and squares, and in the cities of Kuybyshev and Novokuybyshevsk they are completely absent in the new microrayons.

There are, of course, other extremes such as stereotypic tree planting in cities with different sizes and located at the opposite ends of our country.

What is the reason for this? During intermissions I asked this question of Prof. N. Ullas, Secretary of the Governing Board of the Union of USSR Architects.

He responded that in general plans for cities there is still not enough consideration being given to natural and climatic factors, nor to the preservation of natural resources. Occasionally tree planting is conducted in areas unsuitable for such purposes such as industrial regions adjacent to cities. As a result tree planting lags behind city development. It would be advantageous

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to always have a clear cut plan for tree planting in order to have a realistic picture of the extent to which our cities are being covered with trees.

This scientist felt that at the present time it is of the utmost importance to consider the functional aspects of tree planting in different climatic zones, and to have at least one system for tree planting in the general plan which is in complete accord with the existing natural conditions. Them the specialists would have the opportunity to evaluate the system critically and accept or reject it.

Ullas also pointed out that a number of other problems require further study. Each element in a system of tree planting must be evaluated in a residential area, and the functions of gardens within microrayons and sometimes within residential rayons must also be evaluated.

The speakers also pointed out the need for deeper studies on the psychoemotional effects of plants on humans, and the compensating role of vegetation in urbanization.

Those who have been in Donetsk and Omsk could not help but notice the beautiful lawns and flower beds located in sections and squares of these two cities. Thanks to them, the air in those cities became purer. It would appear that nothing could be simpler than creating these green corners. Fur-

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thermore, the creation of a lawn requires only one to two years and not 15 to 20 years that it takes a tree to grow. Unfortunately efforts to create such lawns in new municipal rayons have been largely unsuccessful. There is not enough enthusiasm for this and their significance is not yet adequately appreciated. People should learn to think in new terms and regard planted sections not only as a one-time measure, but as something that requires daily care.

The success of tree planting in the Ukraine is unquestionable. Plans for the development of municipal green zones form an integrated part of national economic planning in the Ukraine.

According to the calculations of K. A. Timiryazev, one hectare of green plants assures healthy breathing for 30 people. Scientists have shown that trees and brushwood capture 80-90 percent of municipal dust, and decrease the noise level by 14 to 15 decibels. This means that these green "vacuum cleaners" should be employed on a wider scale.

Active Rest or Peace

You have noticed, of course, that residents of cities tire very easily. Long rides to and from work, transportation noise, and the accelerated pace of

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city life take their toll. This is especially apparent at the end of a week. Medical studies have shown that many apparently healthy city dwellers after eight to ten months of work (after leave) evidence a lower basal metabolic rate and lower oxygen consumption than the physiologic norm. This is why recreation is so important in the modern city. If it is well organized it will help man regain his work capacity and will weaken adverse effects of unfavorable factors.

The participants of the Conference came to a unanimous conclusion that recreation must be considered as an independent sphere of human activity, as his most important activity. They have defined several forms of rest; daily, weekly, and yearly, and that each form requires a special approach.

First of all let us consider daily and weekly rest. People came to an empirical conclusion regarding their need for this type of rest without, or with little, knowledge of medical recommendation. Under conditions of the five-day work week adequate free time is available. What should we do with it? We began concentrating on getting out of the city. And today it is only with difficulty that you can get on a bus or electric train going out of the city. It has become a basic necessity for us to be close to nature, to walk in a forest, and to become acquainted with architectural landmarks.

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Having determined that rest is necessary, studies began on what rational forms it should take. However -- and it must be admitted -- the scientists have shown themselves to be somewhat unprepared in presenting us with a scientific approach to recreation. Nevertheless, the question remains valid as to the manner in which scientists can assist the modern city dweller?

I. M. Sechenov was the first to determine that active recreation had a more beneficial effect on the organism than simple peace. This phenomenon has been well utilized by the people of Baku who created a "health zone" known throughout the country. Without leaving the city people may engage in physical culture and sports, tan themselves, and take water baths under conditions which are "natural" in every respect.

Their example should be followed by other cities. What a victory for health that would be!

Specialists at the Central Scientific Research Institute of Health Resorts and Physical Therapy of the USSR Ministry of Health have designed calisthenics for various groups in the population, which give due consideration to climate and season of the year. Rational daily and weekly recreation should include some of these recommendations and measures, as well as proper organization of walking excursions, physical strengthening, sun baths, and so on. 18/20

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The Conference speakers noted that not in all cities was maximum use made of the climate and natural environment for daily and weekly recreation, and that this also applies to work settlements. A. Polyanskiy and N. Shklyayev of the TSNIIEP (Central Scientific Research Institute of Experimental Planning) for therapeutic and health resort buildings have presented plans for making it possible to select freely zones for collective and individual recreation, which take into account population growth. Attractive and comfortable gardens and parks can be created in residential rayons, resulting in unique suburban models.

What have the scientists not done yet, what should they commence work on? First of all they should establish physiological foundations for all forms of recreation, and methods for determining the various needs of the population.

Weekly recreation has its own special problems. For example, the need for out-of-the-city rest for inhabitants of large cities is greater than for inhabitants of smaller cities. This should be taken into consideration in planning territories for recreation. It was not by chance that the Conference decided that in those places where the landscape is poor artificial water reservoirs and forests should be created. The wide spaces of our country from beyond the polar circle to the subtropics create tremendous possibilities in this area.

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Everyone wishes to rest in this age. Useful recreation is desired by everyone. In the future the significance of recreation will become even greater. This will undoubtedly affect the structure and appearance of our cities. This is why everyone is concerned about fine details.

A modern city has many problems. They are resolved by architects, hygienists, construction engineers, and climatologists with due deliberation since they realize that we, and future generations, need cities in which it is possible to live in comfort.

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ZAYTSEVA, V., Special Correspondent of Meditsinskaya Gazeta, Kursk Oblast'

"Many Duties, but Few Means of Carrying Them Out"

Moscow, Meditsinskaya Gazeta, 29 March 1972, p 2

Abstract: The principal workload in the field of sanitary supervision is carried by assistant sanitary physicians. They must in some cases even compile annual reports, because specialists with a higher education are not available. In the 25 rayons of Kurskaya Oblast', which cover an extensive territory, schools, stores, farms, repair workshops, and industrial establishments must be visited and investigated at least twice a year. The number of such places to be examined by a single assistant sanitary physician is 262, 309, and 240 in Oktyabr'skiy, Konyshevskiy, and Fatezhskiy rayons, respectively. However, there are no means of transportation. The sanitary epidemiological stations of six rayons in Kurskaya Oblast' do not have a single automobile, while those of six rayons have Moskvich cars, but these cars are useless on rural roads except in the summer. The assistant sanitary physicians have to combine their trips with those of officials of other organizations that have means of transportation, i.e., to rely on lifts, although the sanitary epidemiological service has a fixed schedule of

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inspections. Besides the possibility of obtaining more transportation from the Sanitary Epidemiological Administration of the Ministry of Health RSFSR, local opportunities of securing vehicles from kolkhozes exist, particularly in the winter, when there is little farm work to be done. However, the kolkhozes are reluctant to furnish transportation to sanitary workers who may discover unsatisfactory conditions at the kolkhozes upon inspection. Motorcycles were used extensively before, but after reorganization of the sanitary epidemiological divisions into an independent service, the motorcycles remained at the motor vehicle pools of central rayon hospitals. The assistant sanitary physicians have no equipment for carrying out inspections -- at industrial establishments, the level of noise must be estimated by ear, the humidity determined approximately without a psychrometer, and the level of vibrations determined on the basis of subjective feelings. Not a single one of the 25 rayon sanitary epidemiological stations in Kursk Oblast', including the oblast' station, has a luxmeter, noise meter, vibrograph, or pH meter. No advanced courses for assistant sanitary physicians exist, although their work is becoming more extensive because of the increasing number of establishments that have to be inspected and more demanding because of recent

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progress in industrial and occupational hygiene. Instruction given by local physicians is not always satisfactory, because the physicians who have the special training required are often young and inexperienced or may not be sufficiently interested, feeling that their positions are temporary.

USSR

UDC 576.895.4

KOCHKAREVA, A. V., ZAGNIBORODOVA, Ye. N., ZHERNOVOV, I. V., ZAYTSEVA, V. I., SHILENKO, V. I., ZABEGALOVA, M. N., AVAKOV, S. M., TASHLIYEV, A. O., BEL'SKAYA, G. S., and VAZHEV, A. P., Republic Antiplague Station, Institute of Zoology, Academy of Sciences Turkmen SSR

"Regional Distribution of Ixodid Ticks in Turkmenia"

Ashkhabad, Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Biologicheskikh Nauk, No 5, 1971, pp 36-42

Abstract: The 31 species and subspecies of Ixodid ticks (of the total of 49 living in Turkmenia) gathered from 699 geographic points and included in the collection of the station are analyzed for the distribution of their natural habitats and their geological and botanic living conditions. Hyalomma asiaticum asiaticum proliferates in large numbers in all four regions (clay desert, sandry desert, cultivated river valleys, and southern mountains). H. detritum an. anatolicum, H. an. excavatum, and H. pl. plumbeum thrive mainly in cultivated areas. The most numerous species are H. as. asiaticum and H. numidiana turanica living in sandy desert and Ornithodoros tartakovskyi living in clay desert. Ixodes redikorzevi, Haemaphysalis punctata, Rhipicephalus schulzei, and R. leporis were recorded for the first time in the republic.

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UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 021

TITLE--ISOLATION OF POLY,STYRENESULFONIC ACID, FROM A REACTION MIXTURE -U-

AUTHOR-(05)-ALEKSANDROV, I.V., YEVDOKIMOVSKOPINSKIY, A.N., PETROVA, N.A., DUSHEYKO, D.A., ZAYTSEVA, V.N.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,439

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMER, STYRENE, SULFONIC ACID, CHEMICAL SEPARATION, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

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PROXY REEL/FRAME--3007/1763 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0137003

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 021

CIRC ACCESSION NO--AA0137003

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLY(STYRENESULFONIC ACID) IS SEPD. FROM A REACTION MIXT. IN THE FORM OF ITS SALT. THE MIXT. IS TREATED WITH AMMONIA AND THEN ACETONE UNTIL IMMISCIBLE LAYERS ARE OBTAINED.

UNCLASSIFIED

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USSR UDC 612.2+612.76

POPKOV, V. L., MAILYAN, E. S., GALUSHKO, Yu. S., KOVALENKO, Ye. A., ZAYTSEVA, Ye. I., NITOCHKINA, I. A., STULOVA, L. V., and RYAZHSKIY, A. V., Institute for Biomedical Problems

"Shifts in Gas Exchange, Gas Homeostasis, and Tissue Respiration In Rats During Prolonged Hypokinesia"

Leningrad, Fiziologicheskiy Zhurnal USSR imeni I. M. Sechenov, Vol 41, No 12, 1970, pp 1,808-1,812

Abstract: General gas exchange, pO_2, and pCO_2 did not change significantly in the tissues of rats kept immobilized in special cages for 60 days. However, during the second month of the experiment, there were periods when the intensity of respiration increased in the liver and decreased in the myocardium. After two months of hypokinesia, the weight of experimental rats was substantially less than that of the control (273±10 g and 392±18 g, respectively). Also the physical fitness of the experimental animals declined sharply with respect to both dynamic and static work. The duration of maximum dynamic work decreased more than 2.5-fold white the capacity for static work decreased 9-fold.

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USSR UDC 547.816'759.5'787.37

ZAYTSEVA, Ye. L., PROHODA, A. L., KURKOVSKAYA, L. N., SHIFFINA, R. R., KARDASH, N. S., DRAPKINA, D. A., KRONGAUZ, V. A., Institute of Physical Chemistry Scientific Research imeni L. Ya. Karpova, USSR Institute of Chemical Reagents and Study of Very Pure Substances, Moscow

"Preparation of N-Methacryloyloxyethyl Derivatives of Spiropyrans of the Indoline Series"

Riga, Akademiya Nauk Latviiskoy SSR, Himiya Geterotsiklicheskih Soedinenii, No 10, Oct 73, pp 1362-1369

Abstract: The synthesis of 3a,4,4-trimethyloxyazolidino(3,2-a) indoline (III) from 2,3,3-trimethylindoline and 1-bromo-2-ethanol is described. Reacting III with 5-nitro and 3-methoxy-5-nitrosalicylic aldehyde gives 1-(β-hydroxyethyl)-3,3-dimethyl-6'-nitrospiro(indoline-2,2'-(2H-1)benzopyran), V, and 1-(β-hydroxyethyl)-3,3-dimethyl-6'-nitro-8'-methoxysprio(indoline-2,2'-(2H-1) benzopyran), VI, while reacting III with 3-nitrosalicylic aldehyde gives 4,4-dimethyl-3a-(2-hydroxy-3-nitrostyril)oxazolidino (3,2-a)indoline, VII. V and VII react with methacrylic acid chloride in pyridine to give 1-(β-methacryloyloxyethyl)-3,3-dimethyl-6'-nitrospiro-(indoline-2,2'-(2H-1)benzopyran) and 4,4-dimethyl-3a-(2-methacryloyloxy-3-nitrostyril)oxazolidino (3,2-a)indoline, respectively. If V is reacted

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ZAYTSEVA, Ye. L., et al., Akademiya Nauk Latviiskoy SSR, Himiya Geterotsiklicheskikh Soedinenii, No 10, Oct 73, pp 1362-1369

with methacrylic acid chloride in acetone, 4,4-dimethyl-3a-(2-methacryloyloxy-5-nitrostyril)oxazolidino(3,2-a)indoline results. A discussion of the NMR, IR and electronic spectroscopic structure determinations as well as a discussion of the photochromic behavior of these compounds in various organic solvents is given.

2/2

USSR UDC: 541.64:678.86

YAKUBOVICH, A. YA. (DECEASED), FILATOVA, I. M., ZAYTSEVA, YE. L., YAKUBOVICH, V. S., Scientific Research Physico Chemiscal Institute imeni L. Ya. Karpov, Moscow, State Committee for Chemistry

"Reaction Scheme and Peculiarities of Polycondensation of Alkyl(aryl)phosphazenechlorophosphonyls"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol XII, No 3, Mar 70, pp 585-591

Abstract: The behavior of some 1-dichlorophosphonyl-2,2,2-alkyl(aryl)chlorophosphazenes was studied at high temperatures to determine the mechanism of condensation of compounds in this series to polyphosphazenes. It was found that 1-dichlorophosphonyl-2,2,2-diphenylchlorophosphazene remains unchanged with no conversion to polyphosphazenes when heated to 320°C. When this compound is heated together with 1-dichlorophosphonyl-2,2,2-trichlorophosphazene, a polychlorophosphazene is formed which contains chlorodiphenylphosphazene groups as substituents. In analogous experiments, 1-dichlorophosphonyl-2,2,2-triethylphosphazine forms a polychlorophosphazene which contains triethylphosphazene groups as substituents of the principal polymer chain. It is shown that heating linear polydichlorophosphazenes with 1-dichlorophenyl-2,2,-

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YAKUBOVICH, A. YA., et al, Vysokomolekulyarnyye Soyedineniya, Vol XII, No 3, Mar 70, pp 585-591

2-diphenylchlorophosphazene initiates a reaction with substitution of chlorodiphenylphosphazene radicals for chlorine atoms and release of phosphorus chloroxide. With an excess of 1-dichlorophosphonyl-2,2,2-diphenylchlorophosphazene, the maximum substitution reaches 50% of the total chlorine content in the polydichlorophosphazene. A reaction scheme is proposed for thermal condensation of 1-dichlorophosphonyl-2,2,2-alkyl(aryl)chlorophosphazenes to polyphosphazenes as a two-stage process with formation of the polydichlorophosphazene on the first stage, and substitution of a chloralkyl(aryl) substituted phosphazene radical for the chlorine atoms in the compound in the second stage.

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1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--REACTION SCHEME AND NATURE OF THE POLYCONDENSATION OF CHLOROPHOSPHONYL,ALKYL,ARYL,PHOSPHAZENES -U-

AUTHOR-(04)-YAKUBOVICH, A.YA., FILATOVA, I.M., ZAYTSEVA, YE.L., YAKUBOVICH, V.S.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3), 585-91

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYCONDENSATION, CHLORINATED ORGANIC COMPOUND, ORGANIC PHOSPHORUS COMPOUND, NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0718 STEP NO--UR/0459/70/012/003/0585/0591

CIRC ACCESSION NO--AP0136157

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136157

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION MECHANISM OF THE TITLE COMPDS. WAS STUDIED AT ELEVATED TEMPS. PH SUB2 PCL DOUBLE BOND NP(O)CL SUB2 (I) FAILED TO GIVE POLYPHOSPHAZENES EVEN WHEN HEATED TO 320DEGREES, HOWEVER, WHEN I WAS HEATED WITH CL SUB3 P DOUBLE BOND NP(O)CL SUB2 (II) POLY(CHLOROPHOSPHAZENES((III, X EQUALS PH, Y EQUALS CL) WERE FORMED. ET SUB3 P DOUBLE BOND NP(O)CL SUB2 REACTED WITH II TO GIVE III (X EQUALS Y EQUALS ET). WHEN LINEAR POLY(DICHLOROPHOSPHAZENES(, CL(PCL SUB2 DOUBLE BOND N) SUBN P(O)CL SUB2, WERE HEATED WITH I, CLPPH SUB2 DOUBLE BOND N-RADICALS WERE SUBSTITUTED FOR CL ATOMS WITH THE EVOLUTION OF POCL SUB3. A THERMAL CONDENSATION MECHANISM WAS PROPOSED. FACILITY: FIZ.-KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--TELOMERIZATION OF TETRAFLUOROETHYLENE BY DIPHENYL DISULFIDE -U-

AUTHOR-(04)-YAKUBOVICH, A.YA., ZAYTSEVA, YE.L., ROZANTSEVA, T.V., CHICHERINA, I.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 886-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THIOPHENE, OXIDATION, FLUORINATED ORGANIC COMPOUND, TAUTOMERISM

CONTROL MARKING--NO RESTRICTIONS

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PROXY REEL/FRAME--3006/1275 STEP NO--UR/0366/70/006/004/0886/0887

CIRC ACCESSION NO--AP0134949

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134949

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION (AT 175DEGREES) GAVE 30.3PERCENT PHSCF SUB2 CF SUB2 SPH (I), 8.7PERCENT PHS(CF SUB2) SUB4 SPH, AND SMALL AMTS. OF PHSCF SUB2 CF SUB2 H (II) AND 2,2,3,3,TETRAFLUORODIHYDROBENZOTHIOPHENE. THE OXIDN. OF I OR II WITH CRO SUB3 IN ACOH SOLN. GAVE PHSO SUB2 CF SUB2 CF SUB2 SO SUB2 PH OR PHSO SUB2 CF SUB2 CF SUB2 H, RESP.

FACILITY: FIZ.-KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 515.2/.8

ZAITSEVA, YE. P.

"Assigning Canonical Forms of P_n Collineations in Graphic Form"

Tr. Mosk. aviats. in-ta (Transactions of the Moscow Aviation Institute), 1969, Vyp. 187, pp 5-12 (from RZh-Matematika, No 2, Feb 1970, Abstract No 2A588)

Translation: Several conclusions from the theory of matrices are presented: characteristic polynomial of matrix A; invariant multipliers $E_q(\lambda)$ of matrix $A-\lambda E$; elementary divisors of matrix $A-\lambda E_{n+1}$; necessary and sufficient condition for similarity of two matrical operators (collineations). Based on an algebraic method of construction of canonical forms of collineations, an algorithm for constructing them in a polydimensional projective space is derived. A graph is plotted in correspondence to each canonical form of collineation.

V. Minevich

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USSR

ZAYTSEVA, Zh. N., SHTEYN, M. Ye.

"One Method of Construction of the Shortest Closed Path in a Graph"

Vychisl. Tekhnika, T. 3 [Computer Technology, Vol 3 -- Collection of Works], Kaunas, 1972, pp 417-422 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V406, by V. Zemlyachenko).

Translation: The following problem is studied: convert a given graph into a graph permitting Euler cycles by introduction of additional lines with the minimum possible total length. This problem arises, for example, in minimization of the number of idle motions of a plotter. An approximate algorithm is suggested and data are presented on the effectiveness of the algorithm as run on a computer.

USSR

UDC 621.385.6

SOBOLEV, D.P., ZAZNOBIN, YE. S., PODGORNOV, I.P.

"Measurements Of The 'Fine' Structure Of The Signal Of Power Microwave Devices"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 2, pp 86-99 (from RZh--Elektronika i yeye primeneniye, No 8, August 1970, Abstract No 8A146)

Translation: A description is given of the measurement methods and the construction of units for measurement of the spectrum of a signal of millisecond duration with a resolution of 30 Hz, the spectral density of the fluctuations in the 5 kHz--4.5 MHz frequency band being analyzed with a resolution of 200 Hz, the electrical phase shift, the phase-frequency characteristics and phase deformation in a pulse, and the short-lived instability of the frequency during a time interval of 10-30 milliseconds. Summary.

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1/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EFFECT OF VALINE METABOLITES ON LYSINE SYNTHESIS BY MICROCOCCUS GLUTAMICUS MUTANT STRAINS -U-

AUTHOR--ZAYTSEVA, Z.M.

COUNTRY OF INFO--USSR

SOURCE--PRIKL. BIOKHIM. MIKROBIOL. 1970, 6(2), 151-7

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BACTERIA, BACTERIA MUTATION, CELL PHYSIOLOGY, LEUCINE, VALINE, AMINO ACID METABOLISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0029 STEP NO--UR/0411/70/006/002/0151/0157

CIRC ACCESSION NO--AP0137228

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137228

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ISOLEUCINE WAS REQUIRED FOR THE GROWTH OF MICROCOCCUS GLUTAMICUS MUTANTS T-3 AND T0. THE EXOGENOUS CONCNS. OF VALINE OR LEUCINE GOVERNED THE CONCNS. OF THESE AMINO ACIDS IN THE BACTERIAL CELLS. HIGH CONCNS. OF VALINE OR LEUCINE WERE REQUIRED IN THE GROWTH MEDIA FOR OPTIMUM BACTERIAL SYNTHESIS AND EXCRETION OF LYSINE. FACILITY: ALL UNION RES. INST. GENET. SELEC. IND. MICROORG., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 539.3

ZAZASHVILI, Sh. P.

"Some Boundary Problems of the Planar Theory of Thermoelasticity"

Seminar In-ta Prikl. Mat. Tbilis. Un-t Annotatsii Dokl. T. 5 [Seminar of Institute of Applied Mathematics, Tbilisi University. Annotation of Reports, Vol 5 -- Collection of Works], Tbilisi, 1971, pp 13-18 (Translated from Referativnyy Zhurnal Mekhanika, No 12, 1972, Abstract No 12V65, by N. M. Borodachev)

Translation: Several boundary conditions from the planar theory of thermoelasticity are studied for a homogeneous isotropic medium in the case of stable oscillations. The boundary is a closed curve with curvature continuous is the sense of Holder. Two boundary problems are studied: 1) a normal displacement component, tangential stresses and heat flux are fixed at the boundary; 2) the tangential component of displacement, normal stress and temperature are fixed at the boundary. Both internal and external problems are studied. These problems are then replaced by introducing two equivalent problems. Several theorems are formulated (concerning the form, existence and uniqueness of the solutions). No proofs are given.

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USSR

UDC 616-097+612.071-11/12

KONSTANTINOVA, I. V., ZAZHIREY, V. D., and SHEYNKER, V. Sh., Institute of Medical Biological Problems, Ministry of Health USSR, and Institute of Human Morphology, Academy of Medical Sciences USSR, Moscow

"Investigation of the Effect of Ribonuclease on the Synthesis of Antibodies During Secondary Immunological Response in Vitro and in Vivo"

Moscow, Doklady Akademii Nauk SSSR, Vol 199, No 4, 1971, pp 948-951

Abstract: The study included 480 in vitro tests in which spleen slices obtained from BCE-vaccinated mice and rabbits were incubated with ribonuclease (with protamine sulfate in control tests), H^3-uridine and H^3-thymidine. In addition, 86 in vivo tests were conducted in which mice vaccinated with Vi-antigen, BCE (Bacillus Colnbrook England), and diphtheria toxoid were given daily intravenous or intraperitoneal injections of ribonuclease for five days, and then vaccinated for the second time. Subsequent analysis revealed that ribonuclease in small concentrations stimulated antibody synthesis in vitro and in vivo. In the cultures, enhanced synthesis of ribonucleic acids in lymphocytes and proliferation of reticular cells were also observed. In higher contentrations, the enzyme exerted inhibitory effects which were reversed after the excess ribonuclease was washed out. It is believed that

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203730005-9"

USSR

KONSTANTINOVA, I. V., et al., Doklady Akademii Nauk SSSR, Vol 199, No 4, 1971, pp 948-951

the mechanism of action of ribonuclease is either direct or associated with degradation of ribonucleic acids in dying cells and the products of this hydrolysis -- mono-oligonucleotides -- which regulate cellular metabolism and are reutilized in biosynthesis.

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UDC: 535.37

USSR

VOLOD'KO, L. V., DEMCHUK, M. I., SEVCHENKO, A. N., ZAZHOGIN, A. P., and CHERNYAVSKIY, A. F.

"Investigating the Statistical Method for Recording the Laws of Luminescence Scintillation"

Minsk, Zhurnal Prikladnoy Spektroskopii, vol 16, No 6, 1972, pp 1001-1007

Abstract: The purpose of this paper is to further the development of physical investigation of the processes accompanying luminescence by looking into a better method for statistically recording the laws of luminescence scintillation in the time range of 10^{-9} to 10^{-5} sec, in which there are no principal defects as in the stroboscopic method or in the method of synchronous photon counting. The basic idea of this superior method was first considered in an earlier paper published in this same journal by some of the authors listed above (A. F. Chernyavskiy, et al, 13, 1970, p 840). The present paper gives the results of a thorough investigation into the method and describes an experimental device for investigating luminescence. A block diagram of the device is given and its operation explained. It is found that this method is useful in a practically unlimited range of luminescence intensity and has high resolving power and low error.

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Powder Metallurgy

UDC 621.762.4.001

USSR

CHUKMASOV, S. F., and ZAZIMKO, A. I.

"Forces Acting in a Closed Die During Compacting of Porous Mass"

Metallurgiya i koksokhimiya. Resp. mexhved. nauchno-tekhn sb. (Metallurgy and Coke Chemistry--republic interdepartmental scientific research collection of works), 1970, vyp 18, pp 93-96 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G284)

Translation: Results are presented of the experimental investigation of the process of impact compacting of porous masses-shavings, powders, etc. A description is given of a unit for experimental determination of the force conditions of the process of compacting, and graphs of the process of compacting are presented, which give a complete picture concerning the relationship between the forces acing in the closed die. 5 ill., 1 table.

Authors' abstract

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USSR

GUSEV, B. V., ZAZIMKO, V. G., ZAYATS, Yu. L., OSIPOV, B. A.

"Graphic Analysis in the Study of Mathematical Models"

Graficheskiy Analiz pri Issledovanii Matematicheskikh Modeley [English Version Above], Dnepropetrovsk, 1972, 8 pages (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V710 DEP, by the authors).

Translation: Graphic analysis of mathematical models of technological processes is applied. It is demonstrated using two examples, determination of the optimal parameters of vibration and composition of concrete.

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USSR UDC 621.311.22:621.3.016.31

CHELIDZE, G. V., LYASHENKO, YU. V., SVANISHVILI, R. N., ZAZIYEV, B. N.

"Problem of Optimizing Electric Load Distribution of a Thermal Electric Power Plant"

Vopr. razrab. i vnedreniya sredstv vychisl. tekhn.-- V sb. (Problems of Development and Introduction of Computers -- Collection of Works), Tbilisi, 1970, pp 250-254 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 Yel19)

Translation: The problem of economical distribution of the electric load between the turbo units of thermal electric power plants can be solved by means of the analog computer based on an algorithm developed utilizing the method of relative increments of heat consumption. The data on the thermal loads of the units and the total electric load of the electric power plant are input to the analog computer, and the characteristics of the expenditure and relative increments of heat consumption are simulated. The distribution of the electric load of the condensation section of the turbo units is calculated by comparing the relative heat increments in the condensation flow of steam after which the values of the optimal electric loads of the units are determined. There is 1 illustration and a 2-entry bibliography.

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USSR

UDC 621.791.1:546.26-162:546.821

KAZAKOV, N. F., KRYUCHKOVA, V. P., ZAZOVSKIY, D. G., and VERNYY, V. A.

"Graphite and Titanium Diffusion Welding in a Vacuum"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 71, pp 70-71

Abstract: Results are given of experiments designed to ascertain the optimal modes of welding titanium to graphite. Specimens of the two original metals measured 80 x 50 x 20 mm for Ti and 50 x 50 x 20 mm for the graphite, and were welded together in the SDVU-8M diffusion vacuum machine at a temperature of 1100° C obtained from an LZ-67 high-frequency oscillator with an output power of 60 kW and a frequency of 60-74 kHz. The temperature was controlled by a KhA thermocouple. Metallographic analysis after the welding process was completed showed that complete melting occurred at the point of contact of the metals, and that damage resulting from the mechanical testing was restricted to the graphite. The low resistance to a d-c current passed through the weld indicated its high quality.

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UDC: 669.725.472

USSR

YEVSEYEV, Yu. N., BUDON, V. D., ZAZUBIN, A. I., KUNAYEV, A. M.

"Cathode Polarization in a Melt of Lithium and Beryllium Fluorides"

Katodnaya Polyarizatsiya v Rasplave Ftoridov Litiya i Berilliya [English version above], Alma-Ata, 1972, 6 pp (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G193DEP, by the authors).

Translation: A study of the polarization of an Mo cathode in eutectic melts of Li and Be fluorides has shown that electric separation of Be occurs practically without an overvoltage. The Be ions discharge when the cathode potential is reached, equal to the equillibrium potential of a Be electrode in a fluoride melt. Calculation of limiting electrolysis currents according to Fick's law shows that the true D_c lags behing the geometrically calculated value by a factor of 5-8.

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USSR UDC: 669.725.472

BYDON, V. D., YEVSEYEV, Yu. N., ZAZUBIN, A. I., KUNAYEV, A. M.

"Potentials of Beryllium Electrode in a Melt of Lithium and Beryllium Fluorides"

Potentsialy Berilliyevogo Elektroda v Rasplave Ftoridov Litiya i Berilliya [English version above], Alma-Ata, 1972, 6 pp (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1972, Abstract No 8G194DEP, by the authors).

Translation: The potentials of a Be electrode were measured in the system of Li and Be fluorides with a concentration of BeF_2 in the mixture of 30 to 60 mol. % in the 500-800° temperature interval. The temperature dependences of the Be electrode potentials were established for concentrations of 30, 40, 54 and 60 mol. % BeF_2 in a melt of $LiF-BeF_2$, which are described by equations for the ratio in a Cl-Ag comparison electrode: $\phi_{30\%} = 2.247 + 1.8 \cdot 10^{-4} \cdot T$, v, $\phi_{40\%} = -2.214 + 1.0 \cdot 10^{-4} \cdot T$, v, $\phi_{54\%} = -2.047 + 2.03 \cdot 10^{-4} \cdot T$, v., $\phi_{60\%} = -1.920 + 2.07 \cdot 10^{-4} \cdot T$, v.

1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--JAHN TELLER EFFECT AND PARTIALLY COVALENT BOND AS CAUSES OF LOW SYMMETRY OF GA PRIME POSITIVE, IN PRIME POSITIVE, AND TL PRIME POSITIVE
AUTHOR--ZAZUBOVICH, S.G.

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 38, NR 1, PP 119-129

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--IMPURITY CENTER, LUMINESCENCE SPECTRUM, ALKALI METAL HALIDE, CRYOGENIC PROPERTY, CRYSTAL SYMMETRY, COVALENT BONDING, CRYSTAL LATTICE VIBRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1063 STEP NO--GE/0030/70/038/001/0119/0129

CIRC ACCESSION NO--AP0107572
UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0107572

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PARTIALLY POLARIZED LUMINESCENCE IS OBSERVED FOR GA PRIME POSITIVE, IN PRIME POSITIVE, AND TL PRIME POSITIVE CENTRES IN ALKALI HALIDES OF CSCL,TYPE STRUCTURE AT LIQUID NITROGEN TEMPERATURE. THE SYMMETRY OF EXCITED GA PRIME POSITIVE, IN PRIME POSITIVE, AND TL PRIME POSITIVE CENTRES IS ESTABLISHED TO BE TETRAGONAL IN THE MOST CRYSTALS INVESTIGATED. THE SYMMETRY OF TL PRIME POSITIVE CENTRES IF CSI:TL CRYSTALS IS TRIGONAL. THE POSSIBLE CAUSES OF THE LOW SYMMETRY ARE DISCUSSED. THE INTERACTION OF THE OPTICAL ELECTRONS OF THE ACTIVATOR WITH TETRAGONAL VIBRATIONS OF THE LATTICE MAY BE THE MAIN CAUSE FOR THE LOW SYMMETRY OF THE EXCITED GA PRIME POSITIVE, IN PRIME POSITIVE, AND TL PRIME POSITIVE CENTRES IN MOST OF THE ALKALI HALIDES. THE PARTIAL COVALENT BOND BETWEEN THALLIUM AND SOME OF THE SURROUNDING IODINE IONS SEEMS TO BE ESSENTIAL FOR CSI:TL CRYSTALS.

FACILITY: INSTITUTE OF PHYSICS AND ASTRONOMY. FACILITY: ACADEMY OF SCIENCES OF THE ESTONIAN SSR, TARTU.

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